

Applicant : Hamburg, et al.
Serial No. : 09/010,801
Filed : January 22, 1998
Page : 2 of 14

Attorney's Docket No.: 07844-235001 / P212

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method implemented in a computer program application performing operations on documents having states, the method comprising:
the application maintaining in a memory a state history of a document; and
whenever an interesting operation has occurred, an interesting operation being an operation by the application that changes the state of the document in response to a user command, automatically capturing the state of the document as it exists after the operation and adding the captured state to the state history of the document, the captured state of the document being complete in itself in the sense that earlier document states in the state history of the document can be deleted without adverse effect.
2. (Original) The method of claim 1, wherein the memory comprises a disk file.
3. (Previously presented) The method of claim 1, further comprising:
maintaining in the state history the order in which the stored states were automatically added to the state history; and
displaying the state history to a user as a list of document states shown in their stored order.
4. (Previously presented) The method of claim 3, wherein:
the list of document states displayed to the user comprises a list of items, each item representing a state of the document that existed after an interesting operation and that can be recovered directly by selecting the item.

Applicant : Hamburg, et al.
Serial No. : 09/010,801
Filed : January 22, 1998
Page : 3 of 14

Attorney's Docket No.: 07844-235001 / P212

5. (Previously presented) The method of claim 4, further comprising:
providing a tool operable under user control to obtain source material from any state in the state history and apply it to a current state of the document, where the document is a raster image.

6. (Previously presented) The method of claim 4, further comprising:
enabling a user to select any item in the displayed list of items and cause the application to create a new document having the document state corresponding to the selected item.

7. (Original) The method of claim 4, wherein:
each of the captured states in the state history maintains the state data in essentially its original form, whereby the captured state data is suitable for immediate use in other operations.

8. (Cancelled)

9. (Currently amended) A computer-implemented method of interacting with a user editing a document in a computer program application, the document having a document state, the method comprising:

receiving from the user a sequence of commands to change the state of the document;

changing the document state in response to each command;

adding the changed document state to a state history maintained by the application in a computer-readable memory device each time the document state is changed, the changed document state being complete in itself in the sense that older document states in the state history of the document can be discarded without adverse affect;

for each document state added to the state history, adding a corresponding entry to a history list displayed to the user on a computer-controlled display device operated as part of a graphical user interface; and

in response to a user action, selecting an item in the history list and establishing the document state corresponding to the selected item in the history list as the current state of the document.

Applicant : Hamburg, et al.
Serial No. : 09/010,801
Filed : January 22, 1998
Page : 4 of 14

Attorney's Docket No.: 07844-235001 / P212

10. (Original) The method of claim 9, wherein:
the state history and the history list are limited to storing a preset number of items and excess items are scrolled off the top of the list as new items are added.
11. (Original) The method of claim 9, wherein:
the state history is stored in a region of memory and the oldest document states in the state history are discarded when free space in the region runs low.
12. (Original) The method of claim 11, wherein:
the oldest document states are found and discarded by a memory management process.
13. (Previously presented) The method of claim 9, further comprising:
in response to a user command to change the document state corresponding to the selected item in the history list and established as the current state of the document, deleting the items after the selected item in the history list and the corresponding document states from the state history.
14. (Previously presented) The method of claim 9, further comprising:
in response to a user command to change the document state corresponding to the selected item in the history list and established as the current state of the document, maintaining the items after the selected item in the history list and adding a new item to the end of the history list and a new document state to the state history.
15. (Original) The method of claim 9, further comprising:
enabling a user interface gesture on the history list to create a new document from a document state from the state history.
16. (Currently amended) A method implemented in a computer program application operable to create and edit a document, comprising:
maintaining in a memory a state history of a document, each state in the state history being complete in itself in that any state in the state history can be deleted without adverse affect;

Applicant : Hamburg, et al.
Serial No. : 09/010,801
Filed : January 22, 1998
Page : 5 of 14

Attorney's Docket No.: 07844-235001 / P212

in response to a user action, selecting a first state from the state history and establishing the first selected state of the document as the current state of the document;

in response to a user action, selecting a second state from the state history, the second state being a state created after the first state, as a source of data for an operation; and

performing the operation with the data from the second state on the first state to create a third state.

17. (Currently amended) A method implemented in a computer program application operable to create and edit a document, comprising:

keeping a history of document states of a document, the history being kept by the application, the document states being created automatically by the application whenever a user command to the application changes the state of the document, the document states and being complete in themselves in the sense that earlier document states in the history can be deleted without adverse affect;

enabling the user to discard any of the states in the history to create a revised history; and

enabling the user to step backward and forward through the revised history and thereby alter the state of the document to be any of the document states in the revised history.

18. (Currently Amended) A method implemented in a computer program application operable to create and edit a document, comprising:

keeping a history of document states of a document, the history being kept by the application, the document states being created automatically by the application whenever a user command to the application changes the state of the document, the document states and being complete in themselves in the sense that earlier document states in the history can be deleted without adverse affect;

enabling the user to discard any of the states in the history to create a revised history; and

enabling the user to designate any one of the document states in the revised history and thereby establish the designated state as the current state of the document.

Applicant : Hamburg, et al.
Serial No. : 09/010,801
Filed : January 22, 1998
Page : 6 of 14

Attorney's Docket No.: 07844-235001 / P212

19. (Original) The method of claim 18, further comprising:
saving the history when the document is closed on a long-term storage medium, whereby the history may be restored when the document is later opened and across invocations of the application.

20. (Original) The method of claim 19, wherein:
the saved history resides in the document with final document data.

21. (Original) The method of claim 19, wherein:
the saved history resides in a long-term data repository independent of the original document.

22. (Currently Amended) A method enabling a user to control operation of a computer program application for creating and modifying a document, the method comprising:
identifying for the user on a display device a set of states that the document has been in by operation of the application, each state being complete in itself in the sense that any earlier state in the history can be deleted without adverse affect; and
enabling the user to designate any one of the identified states as a document state operand.

23. (Original) The method of claim 22, further comprising:
displaying the document in a user interface window, the document being a digital image.

24. (Original) The method of claim 23, wherein the digital image has a plurality of layers, each of the plurality of layers having a plurality of channels, the method further comprising:
displaying user-interface elements for applying filters to the digital image.

25. (Original) The method of claim 22, further comprising:
establishing the designated state as the current state of the document in response to a user command.

Applicant : Hamburg, et al.
Serial No. : 09/010,801
Filed : January 22, 1998
Page : 7 of 14

Attorney's Docket No.: 07844-235001 / P212

26. (Cancelled)
27. (Previously presented) The method of claim 22, further comprising:
providing the user a delete tool for deleting the designated state from the set of states.
28. (Original) The method of claim 22, wherein:
the set of states is identified by displaying a scrollable list of elements each identifying
one of the states in the set.
29. (Previously presented) The method of claim 28 wherein the list elements are
ordered by the time the corresponding states were created.
30. (Previously presented) The method of claim 25 wherein the designation and
establishment are performed in response to a single command.
31. (Previously presented) The method of claim 25 wherein the set of states is
displayed in an order, the method further comprising:
enabling the user to make a gesture on a user interface indicating a sequence of displayed
state identifiers and responding to the gesture by displaying the document in the states indicated
as the gesture is made.
32. (Previously presented) The method of claim 25 further comprising:
enabling the user to modify the document state after the establishing step; and
adding the document state resulting from the modification to the set of states identified on
the display device.
33. (Previously presented) The method of claim 31 wherein the set of states is
displayed in order of creation of the states in the set.
34. (Previously presented) The method of claim 31 wherein the document is a digital
image.

Applicant : Hamburg, et al.
Serial No. : 09/010,801
Filed : January 22, 1998
Page : 8 of 14

Attorney's Docket No.: 07844-235001 / P212

35. (Previously presented) The method of claim 25 further comprising:
providing a step backward and a step forward command for the user to execute to
navigate the set of states; and
providing a separate undo and redo command for the user to undo and redo commands
entered by the user.

36. (Previously presented) The method of claim 22, further comprising:
providing a step backward and a step forward command for the user to execute to
navigate the set of states; and
providing a separate undo and redo command for the user to undo and redo commands
entered by the user.

37. (Currently amended)) A computer program product comprising a computer-
readable storage medium tangibly embodying program instructions defining a computer program
application for performing operations on documents having states, the program comprising
instructions operable for causing a programmable processor to:

maintain in a memory a state history of a document by the application; and
whenever an interesting operation has occurred, an interesting operation being an
operation by the application that changes the state of the document in response to a user
command, the state being complete in itself and independent of other states, automatically
capture the state of the document as it exists after the operation, the captured state of the
document being complete in itself in the sense that earlier document states in the state history of
the document can be deleted without adverse affect, and add the captured state to the state
history of the document.

38. (Cancelled)

39. (Currently amended) A computer program product comprising a computer-
readable storage medium tangibly embodying program instructions for interacting with a user
editing a document in a computer program application, the document having a document state,

Applicant : Hamburg, et al.
Serial No. : 09/010,801
Filed : January 22, 1998
Page : 9 of 14

Attorney's Docket No.: 07844-235001 / P212

the computer program product comprising instructions operable for causing a programmable processor to:

receive from the user a sequence of commands to change the state of the document;

change the document state in response to each command;

add the changed document state to a state history maintained by the application in a computer-readable memory device each time the document state is changed, the changed document state being complete in itself in the sense that older document states in the state history of the document can be discarded without adverse affect;

for each document state added to the state history, add a corresponding entry to a history list displayed to the user on a computer-controlled display device operated as part of a graphical user interface; and

in response to a user action, select an item in the history list and establish the document state corresponding to the selected item in the history list as the current state of the document.

40. (Currently Amended) A computer program, residing on a computer-readable medium, comprising instructions for causing a computer to:

keep a state history of a document, each state in the state history being complete in itself in that any state in the state history can be deleted without adverse affect;

in response to a user action, select a first state from the state history and establish the first selected state of the document as the current state of the document;

in response to a user action, select a second state from the state history, the second state being a state created after the first state, as a source of data for an operation; and

perform the operation with the data from the second state on the first state to create a third state.

41. (Currently Amended) A computer program, residing on a computer-readable medium, comprising instructions for causing a computer to:

keep a history of document states by the application, the document states being created automatically by the application whenever a user command to the application changes the state

Applicant : Hamburg, et al.
Serial No. : 09/010,801
Filed : January 22, 1998
Page : 10 of 14

Attorney's Docket No.: 07844-235001 / P212

of a document, the document states and being complete in themselves in the sense that earlier document states in the history can be deleted without adverse affect;

enable the user to discard any of the states in the history to create a revised history; and
enable the user to step backward and forward through the revised history and thereby
alter the state of the document to be any of the document states in the revised history.

42. (Currently Amended) A computer program, residing on a computer-readable medium, comprising instructions for causing a computer to:

keep a history of document states by the application, the document states being created automatically by the application whenever a user command to the application changes the state of a document, the document states and being complete in themselves in the sense that earlier document states in the history can be deleted without adverse affect;

enable the user to discard any of the states in the history to create a revised history; and
enable the user to designate any one of the document states in the revised history and
thereby establish the designated state as the current state of the document.

43. (Currently Amended) A computer program, residing on a computer-readable medium, comprising instructions for causing a computer to:

create and modify a document;

identify for a user on a display device a set of states that the document has been in by operation of the application, each state being complete in itself in the sense that any earlier state in the history can be deleted without adverse affect; and

enable the user to designate any one of the identified states.

44. (Original) The method of claim 36, further comprising:

providing to the user a first undo command function that operates with reference to the first history and a second undo command function that operates with reference to the second history.

Applicant : Hamburg, et al.
Serial No. : 09/010,801
Filed : January 22, 1998
Page : 11 of 14

Attorney's Docket No.: 07844-235001 / P212

45. (Original) The method of claim 3, further comprising:
establishing as the current state of the document a state stored in the state history.

46. (Original) The method of claim 1, further comprising:
maintaining in memory a history of all operations requested by a user, including
operations global to the state of the application.

47. (Previously Presented) The computer program product of claim 37, further
comprising instructions operable for causing a programmable processor to:
maintain in memory a history of all operations requested by a user, including operations
global to the state of the application.